ABSTRACT

A Storage Domain architecture in which a pool of storage devices is controlled by one or a plurality of Storage Domain Servers (SDS) and create a single, compatible, enterprise wide, storage resource pool that appears to the system as a gigantic shared disk drive. These storage devices may be connected to the Storage Domain Server directly via SCSI enclosures attached to the server, across a private Fiber Channel (FC) network, and/or across a public SAN fabric via switches and hubs. The Storage Domain Server logically maps physical storage data on individual storage devices to logical storage data and presents to each host the storage resources allocated to that host by the storage administrator within the Storage Domain. Data stored in the system is available to all authorized hosts and protected against unauthorized access. Storage Domain Servers control all storage devices directly attached to them or scattered in the FC network, and present a consolidated view of that available storage to hosts. The storage resource pool is divisible into multiple and secured "virtual and logical data volumes " that match the requirements of individual hosts. The volumes are allocated to the appropriate host regardless of physical location and then granted a set of properties and rules through the Storage Domain. The Storage Domain allows the volume to be handled independent of the hardware, such that it uniformly supports all storage devices, such as optical discs, magnetic disks, arrays, storage controllers, etc. All volumes can be addressable as simple disc drives.